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Claims

1. A fluid-operable rotary drive clutch (1), of whose drive plates (2) at least one is connected rotationally fixedly to an input assembly (3) and at least one other is connected rotationally fixedly to an output assembly (4), the operating fluid (11) being conveyed from the pressure chamber of a piston/cylinder unit (7) through a connecting line (8) to an additional pressure chamber (6), which is sealed by the annular piston (5) of a clutch actuating ring (9) that is axially translatable when pressure is applied to it, the front face of the piston, facing toward said additional pressure chamber (6), being acted on by the pressure of said operating fluid (11) to engage or disengage said rotary drive clutch (1), depending on the function of said rotary drive clutch (1), and said piston/cylinder unit (7) being connected to said connecting line (8) rotationally fixedly, pressure-tightly, and co-rotatably with the clutch component from which said connecting line (8) opens into said additional pressure chamber (6), **characterized in that** said piston/cylinder unit (7) is acted on by an external force generator (13) comprising a rotor (14) and a stator (15), said rotor (14) being traversable in the axial direction of said piston/cylinder unit (7) and being either
   - journaled so that it is able to move rotationally with respect to said stator (15) or
   - coupled to said rotatable piston/cylinder unit (7) via an axial-force rotating bearing (16).

2. The rotary drive clutch as recited in claim 1, **characterized in that** said axial-force rotating bearing (16) is implemented as a sliding bearing.

3. The rotary drive clutch as recited in claim 1, **characterized in that** said axial-force rotating bearing (16) is implemented as a roller bearing.

4. The rotary drive clutch as recited in one of claims 1 to 3, **characterized in that** said external force generator (13) is a linear motor (17).

5. The rotary drive clutch as recited in claim 4, **characterized in that** said rotor (14) of said linear motor (17) is electrically or magnetoelectrically driven.

6. The rotary drive clutch as recited in claim 4 or 5, **characterized in that** said linear motor (17) is drivable via a servo controller (27).

7. The rotary drive clutch as recited in one of claims 4 to 6, **characterized in that** said linear motor (17) is operated in the closed control circuit with preset operating parameters.

8. The rotary drive clutch as recited in one of claims 1 to 7, **characterized in that** said piston/cylinder unit (7) is supported axially immovably by a pair of oppositely disposed angular ball bearings (18).

9. The rotary drive clutch as recited in one of claims 1 to 8, **characterized in that** said clutch actuating ring (9) is also translatable, in its axial direction of movement opposite the direction of application of pressure, by a counteracting-force generator (20), and serves as a displacing element of a brake (19).

10. The rotary drive clutch as recited in claim 9, **characterized in that** said counteracting-force generator (20) is elastically biased and comprises springs arranged such that they are tensioned against increasing resilient force as the pressure applied by said annular piston (5) to actuate the clutch increases.

11. The rotary drive clutch as recited in one of claims 1 to 10, **characterized in that** said piston/cylinder unit (7) is mounted rotatably in a stationary and self-contained housing (21) and is connected communicatingly, via a co-rotating conduit system (22), to the clutch chamber and/or to the brake chamber (24), if present.

12. The rotary drive clutch as recited in claim 11, **characterized in that** said co-rotating conduit system (22) is connected via an annular feed line (25) to a non-co-rotating cooling oil tank (26).